Contents: Volume 12

JANUARY

A Direct Photometric Method for Chloride in Biological Fluids, Employing Mercuric Thiocyanate and Perchloric Acid *Robert Houston Hamilton* 1

Comparison of Carbonate and Uricase-Carbonate Methods for the Determination of Uric Acid in Serum *Wendell T. Caraway and Herman Marable* 18

Serum Cholinesterase in Analbuminemia *A. A. Dietz, H. M. Rubinstein, and T. Lubrano* 25

Polyacrylamide Gel Electrophoresis of Spinal-Fluid Proteins *John H. Evans and Donald T. Quick* 28

Scientific Notes

The Separation of Protein-bound Iodine and Nonprotein Iodine by Serum Coagulation *Joseph Benotti, Samuel Pino, and Henry Gardyna* 37

Books Received 40

The Clinical Chemist 43

FEBRUARY

Direct Measurement of Serum Iron and Binding Capacity *Jesse F. Goodwin, Bramlett Murphy, and Marcel Guillemette* 47

The Colorimetric Determination of Iron in Biological Material with Reference to its Measurement During Chelation Therapy *Jesse F. Goodwin and Bramlett Murphy* 58

A Continuous Spectrophotometric Method for Measuring the Activity of Serum Alkaline Phosphatase *George N. Bowers, Jr., and Robert B. McComb* 70

Determination of Serum Calcium by Glyoxal Bis (2-Hydroxyanil) Chelation *John F. Bellinger and Robert A. Campbell* 90

Automated Determination of Serum Glutamic Oxaloacetic Transaminase *Stanley Morgenstern, Morris Oklander, Joseph Auerbach, James Kaufman, and Bernard Klein* 95

Book Reviews 112

The Clinical Chemist 113

MARCH

Harry H. Sobotka, 1899–1965: In Memoriam *Harold D. Appleton and Max M. Friedman* 115

A Multichannel Continuous-Flow Analyzer *Ralph E. Thiers, Jean Bryan, and Katherine Oglesby* 120

Profile of Admission Chemical Data by Multichannel Automation: An Evaluative Experiment *D. Jean Bryan, Judith L. Wearne, Alberto Viau, A. Wendell Musser, Fred W. Schoonmaker, and Ralph E. Thiers* 137

The Determination of Amino Acids in 0.1 ml. of Blood Plasma *E. McEvoy-Bowe and S. Sarojini Theri* 144

Use of the Berthelot Reaction in the Automated Analysis of Serum Urea Nitrogen *Alan A. Wilcox, Wallace E. Carroll, Rex E. Sterling, H. A. Davis, and Arnold G. Ware* 151

Blood Pyruvate in Malignant Neoplastic Disorders *H. C. Maneche* 158

Studies in Difference Spectra of Cerebrospinal Fluid
Cornelius W. Kreke, Nicholas G. Barbella, Barbara Cupac, and Diane Dugan 165
The Clinical Chemist 175

APRIL

Ultrasonic Effects on Isoenzymes *Clyde A. Dubbs* 181
Colorimetric Determination of Serum Guanase Activity *Wendell T. Caraway* 187
An Improved Method for Determination of Serum Albumin and Globulin
Alberto Fernandez, Charles Sobel, and Harry Goldenberg 194
Solubility Determination of Cholesterol Polymorphs in Organic Solvents
Royce D. Stauffer and Fritz Bischoff 206
Formylhydrate Dehydrogenase: Assay and Properties *Jack Behrman* 211
A Study of the Colorimetric Dinitrophenylhydrazine Method for the Determination of Serum Glutamic Oxaloacetic Transaminase Activity *J. S. Annino* 217
Automated Determination of Acid Phosphatase: II. Technic for using Robot Chemist *Bernard Klein, Morris Oklander, and Stanley Morgenstern* 226
Direct Photometric Analysis of Serum Calcium with Glyoxal Bis (2-Hydroxyanil)
Milton Mager and Genevieve Farese 234
Scientific Notes
The Automated Fluorometric Determination of Serum Magnesium
Morris Oklander and Bernard Klein 243
Book Reviews 248
The Clinical Chemist 250

MAY

Lipid Content of the Intervertebral Disc
Lawrence Franklin and E. Wayne Hull 253
Quantitative Analysis of Urinary 17-Oxogenic Steroids Using Sodium Meta-periodate Oxidation *Mary G. Metcalf* 258
Use of the Activated Partial Thromboplastin Time in the Control of Heparin Administration *Jane G. Lenahan, Sheldon Frye, Jr., and George E. Phillips* 263
Some Variables Which Influence the Activated Partial Thromboplastin Time Assay
Jane G. Lenahan and George E. Phillips 269
The Automated Determination of NAD-Coupled Enzymes: II. Serum lactate dehydrogenase *Stanley Morgenstern, Richard Flor, Gerald Kessler, and Bernard Klein* 274
Characteristics of a 17-Ketosteroid Reaction
L. A. Kraushaar, E. Epstein, and B. Zak 282
Automated Determination of Acid Phosphatase: III. An evaluation of the α-naphthylphosphate substrate for serum prostatic acid phosphatase
Bernard Klein and Joseph Auerbach 289
An Enzymatic-Spectrophotometric Determination of Pyruvic and Lactic Acid in Blood: Methodologic aspects *J. C. Rosenberg and B. F. Rush* 299
A Rapid Electrophoretic Method for the Determination of the Isoenzymes of Serum Lactate Dehydrogenase *Albert W. Opher, Charles S. Collier, and Joseph M. Miller* 308
Scientific Notes
Detection of Brominism by an Automated Chloride Method
J. L. Driscoll and H. F. Martin 314

67 74A A 30

Letters 319
Book Reviews 320
The Clinical Chemist 321

JUNE

The Determination of Glutamine in Plasma and Urine
Harry G. Preuss, Bernard B. Bise, and George E. Schreiner 329
Determination of Iron in Serum or Plasma by Atomic Absorption Spectrophotometry *Denis O. Rodgerson and Ray E. Helfer* 338
Human Plasma and Serum Trypsin-like Esterase Activity
Roman B. Rutkowski 350
Automatic Estimation of Urea Using Urease and Alkaline Phenol
B. W. Wilson 360
Microdetermination of Protein Nitrogen with a Dumbbell Diffusion Apparatus
Deana Nobel 369
Scientific Notes
A System of Reading AutoAnalyzer Charts *Eleanor Allen* 376
Elimination of False Negative Results with the FPN Forrest Test for Phenothiazine Derivatives in Urine *Irene S. Forrest, Fred M. Forrest, and Saul L. Kanter* 379
Book Reviews 385
The Clinical Chemist 386

JULY

The Quantitation of Major 17-Ketosteroid Fractions by Gas-Liquid Chromatography *Charles R. Berrett and Crichton McNeil* 399
An Automated Colorimetric (Tetrazolium Salt) Assay for Serum Lactate Dehydrogenase *Rodney D. Capps, II, John G. Batsakis, Russell O. Briere, and Roger R. L. Calam* 406
The Photometric Microdetermination of Serum Total Globulins with a Tryptophan Reaction: A Modified Procedure *Abraham Saifer and Thelma Marven* 414
Automatic Method for the Determination of Calcium in the Presence of Magnesium and Phosphate Ions *Preston Smith, Jr., Caroline H. Kurtzman, and Mary E. Ambrose* 418
Investigation of a Potential Source of Difficulty in the Use of the AutoAnalyzer *H. A. Davis, Rex E. Sterling, Alan A. Wilcox, and William E. Waters* 428
An Ultramicro Colorimetric Method for Determination of Total and Direct Serum Bilirubin *Roman B. Rutkowski and Larissa deBaare* 432
Suction Spectrophotometer Cell *R. A. Seibert and H. Busch* 439
Scientific Notes
Quantitative VMA by Thin Layer Chromatography
J. P. O'Neal, John W. Traubert, and Samuel Meites 441
Book Reviews 444
The Clinical Chemist 446

AUGUST

Assay of Urinary Porphyrins: Evaluation of extraction methods and choice of instrumentation *Alberto A. Fernandez, Richard J. Henry, and Harry Goldenberg* 453

Serum Glutamic-Oxaloacetic Transaminase Activity: Diagnostic Accuracy of the Revised Spectrophotometric and the Dinitrophenylhydrazine Methods
Elias Amador, Robert J. Franey, and Mary F. Massod 475
Phenolphthalein Monophosphate as a Substrate for Serum Alkaline Phosphatase
Arthur L. Babson, Sharon J. Greeley, Charles M. Coleman, and George E. Phillips 482
A Simplified Method for Butanol-Extractable Iodine and Butanol-Insoluble Iodine
Joseph Benotti and Samuel Pino 491
Enzyme Fractionation by Means of Large-Scale Continuous-Flow Electrophoresis
Seymour Winsten, Jeanne Jackson, and Paula Wolf 497
A Slide Rule for Time Conversion for Bromsulphalein (BSP) Retention Studies
E. Melvin Gindler 505

Scientific Notes
Effect of a Nonionic Detergent on the Spectral Absorption of Oxyhemoglobin in the Presence of Bilirubin *Stanford H. Jackson* 509
Osmolality of Normal Human Saliva at Body Temperature
Vincent J. Sawinski, Allen Fred Goldberg, and Raymond J. Loiselle 513
Letters to the Editor 515
Book Reviews 517
Abstracts of Papers from Scientific Sessions: 18th National Meeting of the American Association of Clinical Chemists 519

SEPTEMBER

A Gas Chromatographic Method for the Determination of Lactic Acid in Blood
John Savory and Alex Kaplan 559
Automated Methods for Blood Glucose and Urea with Adaptation for Simultaneous Determination *Benjamin Fingerhut, Rocco Ferzola, Walton H. Marsh, and Alfred B. Miller, Jr.* 570
Urinary Chorionic Gonadotrophin Determination *Derek Watson* 577
Studies of Some Indole Compounds Isolated from the Urine of a Mentally Retarded Child *J. Fischl and S. Israel* 586
Screening Test for Hydrindicuria *J. Fischl and S. Israel* 592
Thin-Layer Starch-Gel Electrophoresis: A simple, accurate method for characterization and quantitation of protein components *Lena A. Lewis* 596
The Automated Determination of Acetoacetate in Serum and Urine
Bernard Klein and Morris Oklander 606
Comparison of Serum Magnesium Values by Photometric, Fluorometric, Atomic Absorption, and Flame Emission Methods
Elizabeth L. Pruden, Rebecca Meier, and David Plaut 613
A Study of Phenyl Phosphate and α-Naphthyl Phosphate as Substrates for Serum Acid Phosphatases *Ulysses S. Seal, George T. Mellinger, and Richard P. Doe* 620

Scientific Notes
The Specificity of the Nitromethane-Hyamine Procedure for the Determination of Nitrofurantoin in Urine *John D. Conklin and Richard D. Hollifield* 632
A Simple Method for Extraction and Quantitation of ^{14}C-Labeled Compounds from Blood *Jesse H. Marymont, Jr., and Morris London* 634
Letters to the Editor 637
Book Reviews 639
The Clinical Chemist 642

OCTOBER

The Heptacarboxylic Porphyrin of Various Types of Porphyria and the Melting-Point Curve of Methyl Esters of the I and III Isomers
T. C. Chu and Edith Ju-Hwa Chu 647

Use of Constant Temperature and Sodium Borohydride in the Trihydroxyindole Method of Catecholamines *Elizabeth Carlsen Gerst, Odd S. Steinsland, and William W. Walcott* 659

Estrogens in Human Pregnancy Plasma: I. Studies with gas chromatography
Henry S. Kroman, Sheldon R. Bender, Albert N. Brest, Mark L. Moskovitz, and Mark O. King 670

An Improved Automated Determination of Serum Total Cholesterol with a Single Color Reagent *Walter D. Block, K. John Jarrett, Jr., and Jacob B. Levine* 681

A Quantitative Procedure for the Determination of Nitrofurantoin in Whole Blood and Plasma *John D. Conklin and Richard D. Hollifield* 690

Organochlorine Pesticides in Gallstones
J. H. Simmons and J. O'G. Tatton 697

Phenolphthalein Monophosphate as a Substrate for Serum Alkaline Phosphatase: An appraisal *J. H. Wilkinson and Ann V. Vodden* 701

Elevation of Serum Protein-Bound Carbohydrates and Haptoglobin in Schizophrenia *Ulysses S. Seal and Harold Eist* 709

Concentration of Cerebrospinal Fluid Proteins and Their Fractionation by Cellulose Acetate Electrophoresis *Alex Kaplan and Murray Johnstone* 717

Scientific Notes

Light Sensitization and Peroxides in Sweat
E. Seutter, Annelies H. M. Sutorius, and F. J. Govaert 728

Book Reviews 732

The Clinical Chemist 735

NOVEMBER

Determination of Total and Esterified Cholesterol in Serum
Charles Sobel and Alberto Fernandez 739

The Automated Determination of Serum Uric Acid *Stanley Morgenstern, Richard V. Flor, James H. Kaufman, and Bernard Klein* 748

Specificity of the Free Fatty Acid Titration by the Method of Dole, Modified According to Trout *J. Parijs, F. Barbier, and A. Elewaut* 767

Analysis of Urinary 17-Ketosteroids by Gas-Liquid Chromatography
Maryon W. Ruchelman and V. William Cole 771

Amobarbital Metabolism in Man: A gas chromatographic method for the estimation of hydroxyamobarbital in human urine
Jerome J. Kamm and Edward J. Van Loon 789

Determination of LDH Isoenzymes *Julio Bergerman* 797

The Interference of Chlorpromazine Metabolites in the Analysis of Urinary Methoxy-Catecholamines *Arnold G. Blumberg, Audre M. Heaton, and John Vassiliades* 803

Determination of Nonfibrin Protein in Fibrin Clots by Use of I^{131}-Labeled Protein Fractions *G. Sheldon Green* 808

Scientific Notes

A Modified Automated Ferricyanide-Phosphomolybdic Acid Procedure for Serum or Plasma Glucose *Bernard Klein, Stanley Morgenstern, and James H. Kaufman* 816

Letters to the Editor 824
Book Reviews 825
The Clinical Chemist 826

DECEMBER

Editorial 829
A Titrimetric Method for Determining Organic Acids and Bases in Urine
Gussie Goldberg, Wellington Paul, and Harvey Gonick 830
The Effect of Bacterial Contamination and Aging on the Volatility of Mercury in Urine Specimens *H. Wall and C. Rhodes* 837
Detection of Phenothiazine Derivatives in Urine: An evaluation of 3 methods
Herman Brownstein and Alfred R. Roberge 844
Photometric Determination of pH with a Single Standard and Calculation by Nomogram: Application to human plasma pH
Donald D. Van Slyke, Lawrence V. Hankes, and Jarvis John Vitols 849
Simplified Method for the Estimation of Inorganic Phosphorus in Body Fluids
Harry Goldenberg and Alberto Fernandez 871
Quantitation of A_2 Hemoglobin by Electrophoresis on Cellulose Acetate
Ann S. Pinfield and Denis O. Rodgerson 883
Scientific Notes
Ultramicro Electrophoresis *J. Fischl and C. Gordon* 887
Semiautomatic Pipetting Device (the Governor Pipet) for Clinical Chemistry Procedures *Norman B. Harrison* 890
Letter to the Editor 894
Books Received 895
The Clinical Chemist 897
Index to Volume 12: Authors, titles and subjects 903

824
825
826

829

830

837

844

849

871

883

887

890
894
895
897
903